COASTAL CONSERVANCY

Staff Recommendation
May 18, 2005

CASPAR CREEK FISH PASSAGE IMPROVEMENT

File No. 05-021
Project Manager: Michael Bowen

RECOMMENDED ACTION: Authorization to disburse up to $600,000 to the California Department of Forestry and Fire Protection ("CDF") to remove and replace the existing fish ladders on the north and south forks of Caspar Creek in Mendocino County to improve fish passage throughout the watershed.

LOCATION: Caspar Creek, near the towns of Caspar and Mendocino in Mendocino County (Exhibit 1).

PROGRAM CATEGORY: Resource Enhancement

EXHIBITS

Exhibit 1: Project Location and Site Map

Exhibit 2: Letters of Support

Exhibit 3a: Mitigated Negative Declaration, Notice of Completion

Exhibit 3b: Biological Opinion

Exhibit 4: Mitigation Monitoring and Reporting Program

RESOLUTION AND FINDINGS:

Staff recommends that the State Coastal Conservancy adopt the following Resolution pursuant to Sections 31251-31270 of the Public Resources Code:

"The State Coastal Conservancy hereby authorizes the disbursement of an amount not to exceed six hundred thousand dollars ($600,000) to the California Department of Forestry and Fire Protection ("CDF") to implement the Caspar Creek Fish Passage Improvement Plan subject to the following conditions:

1. Prior to CDF's commencement of work, the Executive Officer of the Conservancy shall approve in writing a work program, schedule of completion, project budget, any contractors to be employed and a signing plan acknowledging the Conservancy and Proposition 12 funding;

2. The CDF shall submit evidence that all necessary permits have been obtained.

3. The CDF shall install a sign on the project property acknowledging Conservancy and Proposition 12 funding in a manner acceptable to the Conservancy's Executive Officer."

Staff further recommends that the Conservancy adopt the following findings:

"Based on the accompanying staff report and attached exhibits, the State Coastal Conservancy hereby finds that:

1. The proposed project is consistent with the purposes and criteria set forth in Chapter 6 of Division 21, sections 31251 – 31270 of the Public Resources Code regarding the enhancement of coastal resources.

2. The Conservancy has independently reviewed the mitigated Negative Declaration prepared and adopted August 7, 2003 by the Department of Forestry and Fire Protection, and the Biological Opinion issued by NOAA Fisheries May 6, 2003, and finds that there is no substantial evidence that the project will have a significant effect on the environment, as defined in 14 California Code of Regulations Section 15382."

PROJECT SUMMARY:

Staff recommends authorization to disburse up to $600,000 to the California Department of Forestry and Fire Protection ("CDF") to implement the Caspar Creek Fish Passage Improvement Plan ("Plan") within the Caspar Creek watershed, much of which is located within the Jackson State Demonstration Forest. The proposed project provides an opportunity to ensure adequate fish passage at a research station where more than 40 years of study of the effects of timber harvest on water quality and quantity have been conducted. The existing fishways on the gaging stations are dilapidated, and frequently fail to provide sufficient opportunity for juvenile and adult Coho salmon to ascend to the upper watershed for spawning and rearing purposes.

The existing fishways have, particularly during low flow years, prevented fish from ascending Caspar Creek due to excessive heights between pools, leaking plunge pools, and impassably high flow velocities within the upper portions of the fishways themselves. Leakage at the existing fishways also tends to trap juvenile outmigrating coho and steelhead in the pond above the weir and fishway, resulting in mortality caused by deteriorating water quality conditions in late summer and early fall.

Fish capable of ascending such barriers are often too fatigued to spawn. Fish prevented from ascending such barriers typically congregate in discharge pools below, where they may fall prey to predators or poachers, and where their spawning opportunities are limited to the areas downstream of the obstruction.

Many such barriers to fish passage have been identified, and are cited in the Conservancy's recently completed report, "Inventory of Barriers to Fish Passage in California's Coastal Watersheds," attached as Exhibit 5. The Caspar Creek fishways are rated high priority barriers for modification or removal in this report.

In order to remedy the situation at Caspar Creek, the CDF would construct permanent, non-leaking fishways that provide appropriate water velocities, jump heights, and other design elements that ensure excellent upstream and downstream fish passage for juvenile and adult salmonids, as well as other aquatic species. Passage design criteria combined with design criteria that protect the integrity of the data collection efforts at the Caspar Creek facility will reduce fishway maintenance costs for the State in the future while providing an excellent investment in infrastructure that will benefit Coho salmon, their habitat, and State research efforts for decades. If this authorization is approved, the CDF will implement this project immediately, immediately increasing access to historic range for federally and State listed Coho salmon and steelhead trout.

CDF will work in concert with the Five Counties Salmonid Conservation Program ("Program"), an official association of counties sharing in common the desire to recover salmon populations in their coastal streams. The Program largely pioneered the field of fish passage improvement in California, particularly in coastal watersheds and on county roads. The Program's earlier barrier assessments and project prioritization directly led to the implementation of 29 projects between 1999 and 2002, nine of which received partial funding from the Conservancy. The work of the Program is well known, and was recently recognized with the EPA's Clean Water Partnership for the 21st Century award, as well as a certificate of Special Congressional Recognition.

Project History: In 1997, the Counties of Del Norte, Humboldt, Mendocino, Siskiyou, and Trinity agreed to collaborate on a proactive response to the federal listings of salmon as threatened species by forming the Five Counties Salmonid Conservation Program ("Program"). The goal was to seek opportunities to contribute to the long-term recovery of salmon and steelhead in Northern California. The objectives were to: evaluate options for improving county plans, policies, and practices to provide or improve salmonid habitat; identify areas where Counties might be vulnerable to challenges under the ESA; and upgrade training programs and recovery project monitoring and reporting procedures. Initial meetings identified causative factors of salmonid declines and how county infrastructure contributed to that decline, information gaps on limits to salmonid recovery, and priority tasks required to obtain missing information necessary for concerted recovery efforts. A high-priority task included conducting culvert inventories on county roads to evaluate fish passage and prioritize treatments.

The inventories and fish passage evaluations of culverts within the five counties' road systems were conducted between 1998 and 2000. The objective was to assess passage of juvenile and adult salmonids and develop project scheduling documents to prioritize corrective treatments to provide unimpeded fish passage. The inventories were limited to county-maintained crossings within anadromous stream reaches known to historically and/or currently support runs of coho salmon (*Oncorhynchus kisutch*), chinook salmon (*O. tshawytschia*), and/or steelhead (*O. mykiss irideus*).

During the course of these assessments, the Program matured from a loose affiliation of county, agency, and non-profit staff to a formal fishery restoration program administered through the County of Trinity, a non-coastal county adjoining two coastal counties, and highly dependent upon the fishery resources of the Trinity River, the largest tributary to the Klamath River system.

Following completion of the final fish passage barrier reports, two of the counties sought financial assistance for project implementation from the Conservancy, and others sought funds from the California Department of Fish and Game. Subsequently, the Conservancy authorized grants to the Counties of Humboldt and Del Norte to help implement 10 fish passage improvement projects. Additionally, at the June, 2002 meeting, the Conservancy approved the Digger Creek Barrier Removal Project in Mendocino County, which was originally identified as a high priority in the Mendocino County inventory of barriers.

During that same time, and in response to an appropriation from the Salmon Habitat Restoration Program, sponsored by Senator Byron Sher (D-Palo Alto), the Conservancy conducted an extensive and first-of-its-kind inventory of existing fish passage barrier data for coastal California streams. That report identifies more than 20,000 potential barriers to fish passage, 175 of which are high – priority, artificial, total barriers to fish passage. A special high priority identified in that report was the repair of the degraded fishways on Caspar Creek.

In response to need to implement fish passage improvement projects immediately, the Conservancy awarded a design and permitting grant to the County of Trinity on August 14, 2003 to design, permit and prepare for implementation at least ten fish passage improvement projects. The County has utilized this grant effectively, leveraging the planning grant by securing funds to implement nearly all of the projects, and thereby ensuring the timely implementation of the projects. When built, these projects will provide new access to many miles of historic Coho steelhead habitat. Removal and improvement of the fishways on the north and south forks of Caspar Creek will improve passage for upstream spawning 1.68 miles and 1.86 miles respectively.

One of the projects evaluated and designed but not implemented under the aforementioned grant is the repair of the fishways at Caspar Creek, where the United States Forest Service (USFS) maintains two research stations on the north and south forks of Caspar Creek, Mendocino County. Each facility includes a sediment/debris stilling pond created by a concrete broad-crested weir with a low-flow v-notch. A fish ladder is located downstream of each v-notch weir to provide fish passage.

These monitoring facilities are a component of the Caspar Creek Watershed Study, a long-term monitoring and research program conducted by the USFS and CDF since 1962. There are only three other locations in the United States with similar long-term continuous stream flow data from small, forested watersheds. Currently, a 100-year Memorandum of Understanding between the USFS and CDF, signed August 17, 1999, describes the relationship between the two agencies pertaining to watershed research in Caspar Creek.

When USFS initiated consultation to conduct maintenance operations at the facilities, NOAA Fisheries, in its biological opinion approving the project also identified Reasonable and Prudent Measure 3, which states that measures shall be taken to ensure that the fish ladders are

adequately designed and evaluated in order to ensure that salmonid passage is not impeded. The ladders were long a subject of contention between the Department of Fish and Game and the Department of Forestry and Fire Protection: All agreed that the project was necessary for improving fish passage, but the prohibitive cost of the structures prevented CDF from taking on the project and NOAA and DFG declined to mandate their repair. Thus, the recommendation was offered as a Reasonable and Prudent Measure for offsetting the potential effects of the project, with the hopes that the project might be completed. The proposal was subsequently addressed briefly in the CDF's environmental document, but simply as a project element, not as a mitigation measure. In light of the biological need of the project, Conservancy staff is recommending funding project implementation.

PROJECT FINANCING:

Coastal Conservancy	$600,000
Five Counties Program *(Biological and Technical Services)*	$10,000
Department of Forestry and Fire Protection *(Technical and Planning Services)*	$40,000
Total Project Cost	**$650,000**

The expected source of Conservancy funds for this project is the appropriation to the Conservancy from the Safe Neighborhood Parks, Clean Water, Clean Air and Coastal Protection Bond Act of 2000 (Proposition 12), Coastal Salmon Funds. The CDF and the Program will provide jointly approximately $50,000 of in-kind contributions in the form of data collection, technical analyses, project design, and permit material preparation for pre-implementation planning purposes.

CONSISTENCY WITH CONSERVANCY'S ENABLING LEGISLATION:

The proposed project is undertaken pursuant to Chapter 6 of Division 21 of the Public Resources Code (Sections 31251-31270, respectively), as follows:

Pursuant to Section 31251, the Conservancy may award grants to local public agencies and non-profit organizations for the purpose of enhancement of coastal resources which, because of human-induced events, or incompatible land uses, have suffered loss of natural and scenic values. Consistent with this section, the proposed authorization provides funds to CDF to enhance coastal fishery resources disturbed by incompatible land uses, such as inappropriate fishway installation or decaying infrastructure.

Pursuant to §31251.2(a), "In order to enhance the natural or scenic character of coastal resources within the coastal zone, the Conservancy may undertake a project or award a grant…to enhance a watershed resource that is partly outside of the coastal zone…." Consistent with this section, CDF and the Program requested Conservancy assistance with the Caspar Creek projects located

entirely outside the coastal zone for the purpose of implementing a project intended to benefit salmon populations known to travel many miles upstream of the coastal zone boundary in order to fulfill their life history patterns. Indeed, salmon depend on unimpeded access to high quality habitat both within and outside of the coastal zone in order to survive. If salmon and other highly prized aquatic resources are to be maintained and restored to historic levels, funding must be provided to improve salmon habitat both within and outside the coastal zone. This section also requires the support of the California Department of Fish and Game. DFG is one of the chief proponents of this project and a support letter is included in Exhibit 2.

Pursuant to Section 31252, all areas proposed for resource enhancement should be identified in a certified local coastal plan or program as requiring public action to resolve existing or potential resource problems. As an anadromous fish - bearing stream, Caspar Creek is *de facto* ecologically sensitive habitat area (ESHA), as defined in the Mendocino County LUP (LUP p. 35). Moreover, Caspar Creek is designated in the LUP as a Special Treatment Area, an area requiring additional resource protections designed to "assure the protection of natural and scenic resources" (LUP p. 39). The proposed project's goal of enhancing anadromous fish populations in Caspar Creek is therefore consistent with Section 31252.

Finally, pursuant to Section 31253, "(the) Conservancy may provide up to the total of the cost of any coastal resource enhancement project…." and the amount of the Conservancy contribution shall be determined only after an assessment of funding generally available and other factors. The proposed contribution by the Conservancy was determined based on application of priority criteria, as discussed below, and after taking into account other available resources and the matching contributions to the project by other funding sources.

The proposed authorization is consistent with the Mendocino Local Coastal Program as described in the Consistency with Local Coastal Program Policies below.

CONSISTENCY WITH CONSERVANCY'S STRATEGIC PLAN GOAL(S) & OBJECTIVE(S):

Consistent with **Goal 6 Objective A** of the Conservancy's Strategic Plan, the proposed project will contribute to the development of approximately 70 plans and projects that preserve and restore coastal watersheds and create river parkways.

Consistent with **Goal 6 Objective A(1)** of the Conservancy's Strategic Plan, the proposed project will leverage the results of the recently completed study of barriers to fish passage, through the implementation of projects to improve habitat for anadromous fish. The proposed authorization will enable the Conservancy, in concert with the grantee, to increase available habitat for aquatic species, notably salmon, by preparing to remove instream barriers to their free migration. By employing the Conservancy's recently completed report, "An Inventory of Barriers to Fish Passage in California's Coastal Watersheds," as well as the expertise of the grantee, the Conservancy will ensure measurable increases in available habitat and, presumably, measurable increases in anadromous fish populations within and above the project areas. In order to ensure the success of this strategy, Conservancy staff will, in conjunction with the grantee, monitor the efficacy of the projects and chronicle the degree of success at the project sites. Unlike many enhancement project sites, the wealth of existing data regarding the fish population

and watershed habitat conditions in Caspar Creek will make this determination of project effectiveness relatively easy.

CONSISTENCY WITH CONSERVANCY'S PROJECT SELECTION CRITERIA & GUIDELINES:

The proposed project is consistent with the Conservancy's Project Selection Criteria and Guidelines adopted January 24, 2001, in the following respects:

Required Criteria

1. **Promotion of the Conservancy's statutory programs and purposes:** See the "Consistency with Conservancy's Enabling Legislation" section above.
2. **Consistency with purposes of the funding source:** See the "Project Financing" section above.
3. **Support of the public:** Supporters of this project include the Department of Fish and Game, California Department of Forestry and Fire Protection, National Oceanic and Atmospheric Administration: Fisheries, the County of Mendocino, and others. Letters of support are included in Exhibit 2.
4. **Location:** Caspar Creek enters the Pacific Ocean at the town of Caspar, six miles south of the City of Fort Bragg. Caspar Creek is a short-reach coastal stream located almost entirely within the Jackson Demonstration State Forest. The project sites are located on the north and south forks of Caspar Creek, approximately one quarter mile above the confluence of the two forks.
5. **Need:** The proposed project on the north and south forks of Caspar Creek would improve access to more than 3.5 miles of habitat, and ensure the timely implementation of an important coho salmon restoration opportunity, while protecting the integrity of the scientific analyses conducted by the forest research station at Jackson Demonstration Forest.
6. **Greater-than-local interest:** Restoration of anadromous fisheries is widely recognized as a local, state and federal goal. Similarly, achieving a firm scientific understanding of the effects of timber harvest on water quality and quantity is of great interest and need. The proposed project will help to increase access for salmon and steelhead to 3.5 miles of high quality habitat in Caspar Creek, while ensuring the Forest Service's ability to continue data collection efforts, and thereby maintain more than 40 years of high quality scientific research on this topic. Although Caspar Creek is not specifically mentioned in The Recovery Strategy for California Coho Salmon, Recommendation MC-HU-33, calls for "allocating substantial improvement efforts towards identified biological refugia, spawning coho salmon populations, (and) suitable habitat accessible to coho salmon." Ensuring adequate passage to existing refugia for existing coho populations within the Caspar Creek watershed, is thus consistent with and supportive of this goal.

Additional Criteria

7. **Urgency:** Coho salmon are currently at 6 to 15% of their abundance during the 1940s. Given this decline, and in light of the State Recovery Strategy's primary objective of returning coho salmon to a level of sustained viability, while protecting their genetic integrity, enhancement projects with a high potential for recovering local populations of coho salmon are a high priority for the State.
8. **Leverage:** See the "Project Financing" section above.
9. **Innovation:** Opportunities to provide unimpaired access throughout entire watersheds are rare, and usually prohibitively expensive. Such opportunities are particularly unusual in areas where the entire watershed is protected by its ownership status as it largely is within Jackson State Forest. The inoperable fishways on Caspar Creek appear to be the only significant constraint to the protection and enhancement of a robust Coho salmon population within the watershed.
10. **Readiness:** The CDF has demonstrated that it has the expertise, local public support, and administrative capability necessary to commence and complete the project prior to the reversion of funds in 2006.
11. **Realization of prior Conservancy goals:** The Conservancy, in consultation with DFG and NOAA Fisheries staff, identified Caspar Creek as a high priority in both its Inventory of Barriers to Fish Passage report, and in the planning and design grant awarded to the 5 Counties program. Implementing this project in a timely fashion will realize a previously identified fish passage improvement goal.
12. **Cooperation:** Fish and Game, NOAA Fisheries (primary permitting agency), and others have all expressed support for, and a willingness to, cooperate with the grantee in implementing the project.

CONSISTENCY WITH LOCAL COASTAL PROGRAM POLICIES:

Work sites will be located outside of the coastal zone. However, the aquatic resources and habitat quality of stream channels within and outside of the coastal zone boundaries are inextricably linked. Fish passage barriers affect coastal resources regardless of their location within the watershed. The anadromous fish populations that spend part of their life history within the coastal zone reside for extended periods outside of the coastal zone, and therefore depend upon free passage within a watershed throughout their life history. Thus, this authorization is consistent with the relevant portions of the Coastal Element of the Mendocino County Land Use Plan (LUP)—part of Mendocino County's Local Coastal Program (LCP), which was certified by the Coastal Commission on September 10, 1992, and which states:

"Channelization, dams, or other substantial alterations of rivers and streams shall be limited to…necessary water supply projects….Where any of these uses are permitted the best feasible mitigation measures shall be incorporated into the development." (LUP Policy No. 3-1-9) The proposed authorization seeks to ameliorate the ecological consequences of a well designed but decaying fishway at a weir that serves not as a water supply project, but as a research facility for

the Forest Service. By addressing the effects of construction projects completed prior to the adoption of the natural resource protection policies enumerated in the LUP generally, and in this policy specifically, the proposed project will bring the existing facility into conformance with the LUP. By improving fish passage facilities at dams and other barriers to fish passage, this authorization will begin to remove existing limitations to the historic range of commercially and socially important anadromous fish species, as well as other aquatic organisms, and set new standards for future compliance with this Policy. The proposed authorization is therefore consistent with, and will enhance the objectives of this policy.

"….No structure or development…which could degrade the riparian area or diminish its value as a natural resource shall be permitted in the Riparian Corridor except for…channelizations, dams or other substantial alterations of rivers and streams as permitted in Policy 3.1-9; pipelines utility lines and road crossings, when no less environmentally damaging alternative route is feasible…" (LUP Policy No. 3-1-10). The proposed authorization seeks to reverse the ecological consequences of a decaying facility completed prior to the adoption of the natural resource protection policies enumerated in the LUP generally, and in this policy specifically. By replacing barriers to fish passage with new fish passage facilities, this authorization will begin to remove existing limitations to the historic range of commercially and socially important anadromous fish species, as well as other aquatic organisms, and set new standards for future compliance with this Policy. The proposed authorization is therefore consistent with, and will enhance the objectives of this policy.

"The Mendocino Coast is an area containing many types of marine resources of statewide significance. Marine resources shall be maintained, enhanced, and, where feasible, restored; areas and species of special biologic or economic significance shall be given special protection; and the biologic productivity of coastal waters shall be sustained." (LUP Policy No. 3.1-25) Whether within or outside of the coastal zone, the proposed authorization fits the general criteria and mandate of this policy by: 1) restoring marine resources such as anadromous fish which depend upon access to available habitat in coastal streams; 2) protecting areas of the Mendocino Coast and species there of special biologic or economic significance such as steelhead and coho salmon, both of which are species of both biologic and economic significance, and; c) sustaining the biologic productivity of coastal waters by enabling anadromous fish to return to their spawning grounds. The proposed authorization is thus consistent with and implements Policy No. 3.1-25.

COMPLIANCE WITH CEQA:

The CDF, in partnership with the United States Forest Service, which maintains a research station at the Caspar Creek impoundments, proposes to continue maintenance of two weir ponds and to improve two associated fish passage facilities in the Caspar Creek watershed within the Jackson Demonstration State Forest, located in Mendocino County, California.

Following several meetings beginning in 2001, the USFS initiated formal consultation with NOAA Fisheries on March 4, 2002 pursuant to section 7 of the Endangered Species Act of 1973 regarding the effects of monitoring activities in Caspar Creek in Jackson Demonstration State Forest on threatened Central California Coast (CCC) coho salmon (Oncorhynchus kisutch) and

threatened Northern California (NC) steelhead (Oncorhynchus mykiss) and to designated CCC coho salmon critical habitat and Essential Fish Habitat.

Formal consultation began on March 4, 2002, and on January 16, 2003 NOAA Fisheries received the current conceptual designs for the fishways from CDF. On May 6, 2003 NOAA Fisheries, in their biological opinion, listed three "Reasonable and Prudent Measures" and a list of "Terms and Conditions" to implement the prudent measures as required for an Incidental Take Permit for the USFS-CDF proposal.

The CDF approved an initial study and mitigated negative declaration for the proposed project on August 7, 2003, and a Notice of Determination September 12, 2003. The initial study identified potentially significant impacts that can be mitigated to a less-than-significant level in the areas of biological resources, as described below.

Biological Impacts: The initial study identified potential impacts to endangered fish species and plant species resulting from project construction activities. CDF proposes to: 1) conduct work during low flows and following fish migration periods (between June and October); 2) Conduct all work in accordance with a section 10(A) Incidental Take Permit issued by NOAA Fisheries and a 1600 Permit issued by DFG; 3) Ensure qualified DFG biologists properly remove as many fish as possible from the pond prior to pond drainage; 4) Hold and relocate fish to a target relocation site on the same creek, upstream of the project site; 5) Reduce sediment turbidity by siphoning from the top of the pond and preparing stilling areas downstream of the weir pond with clean washed gravel to allow sediment to settle out; 6) Apply a series of best management practices to diminish any sediment input from heavy equipment operations; 7) To prevent dewatering creek below the weir bypass half of the creek flow through the weir pond drain valve; 8) Conduct another plant survey before start of operations to identify any plants of special concern and to protect plants, relocate plants, or relocate equipment staging footprint as necessary should any plants of special concern be identified.

While the Initial Study identified these mitigation measures, the CDF also intends to conduct a series of additional measures to ensure adequate and timely implementation of the proposed project. This includes the preparation and implementation of a revegetation plan to restore riparian habitat in the project construction footprint.

CDF also identified less-than-significant impacts to in the area of aesthetics, hazardous materials, hydrology and water quality, noise, transportation, and mandatory findings of significance. CDF addressed or incorporated mitigation measures to lessen these impacts, including 1) Aesthetics: Noting that project area is seldom visited by the public but committing to restoring area to near pre-project appearance; 2) Hazardous materials: All equipment operators will follow proper and safe fueling and servicing procedures, and all equipment will be required to refuel and serviced up the road from the project area at a flat area where any accidental spill can be contained and cleaned prior to entering a waterway. There will be no on-site storage of fuel or chemicals; 3) Hydrology and Water Quality: Top siphoning, maintaining adequate bypass flows downstream of the project site, and the establishment of settling ponds will all ensure adequate and good quality bypass flows below the project area to protect aquatic species; 4) Noise: Few pieces of heavy equipment working for a relatively short period of time are considered to present a less than significant impact on the ambient noise level in the project area; 5) Transportation and Traffic: Motor vehicle traffic is prohibited in the project area, but traffic warning signs will be placed in strategic areas to alert bike and pedestrian recreationalists.

Staff has reviewed the initial study, mitigated negative declaration, mitigation monitoring and reporting program, and biological opinion prepared by the CDF and NOAA Fisheries for the Caspar Creek project, and recommends that the Conservancy find that the project, as mitigated, does not have the potential to have a significant affect on the environment. Staff will file a Notice of Determination upon approval of the project.